Total No. of printed pages = 7

RETEST EXAMINATION 2025 (OLD)

Semester : 3rd (Old)

Branch : Computer Engineering/ Computer Science And Engineering

Subject Code : CO-301

New Syllabus/Old Syllabus : Old Syllabus

Subject Name : COMPUTER APPLICATION AND PROGRAMMING

Full Marks – 70

Time – Three hours

The figures in the margin indicate full marks for the questions.

PART – A

Marks – 15

(*All* questions are compulsory in PART – A.)

1. Choose the correct options : $1 \times 10 = 10$

(a) In which generation of computers was Integrated Circuit (IC) technology used ?

(i) First (ii) Second

(iii) Third (iv) Fourth

[Turn over

(b) Which unit controls the overall functioning of the computer ?

(i) Memory Unit (ii) Control Unit

(iii) ALU (iv) Register

(c) The decimal equivalent of binary number 1011 is

(i) 9 (ii) 10

(iii) 11 (iv) 12

(d) The result of $1010_2 + 0101_2$ is

(i) 1111_2 (ii) 10000_2

(iii) 1101_2 (iv) 1011_2

(e) An Operating System is an example of

(i) Application Software

(ii) System Software

(iii) Utility Software

(iv) Firmware

(f) Which of the following is invalid regarding an Operating System ?

(i) An operating system is an application software.

(ii) An operating system can be considered as a software manager of a computer system.

(iii) Without an operating system a computer system can not be operated on.

(iv) An operating system is a collection of different programs performing different tasks.

(g) The "http" in a web address stands for

(i) Hyper Text Transfer Protocol

(ii) High Text Transfer Protocol

(iii) Hyperlinks Text Transfer Process

(iv) Hyper Text Transmission Program

(h) Which network topology is most commonly used in LANs ?

(i) Star (ii) Ring

(iii) Mesh (iv) Bus

(i) Which loop is guaranteed to execute at least once in C ?

(i) For loop (ii) While loop

(iii) Do-while loop (iv) Switch

(j) What will be the output of the following code ?

```
{
  int a = 5, b = 2 ;
  printf("%d", a % b) ;
}
```

(i) 2.5 (ii) 2

(iii) 1 (iv) 0.

2. Answer the following in a word/a sentence each : 1×5=5

(a) What does ALU stand for ?

(b) What does the digit 'A' represent in hexadecimal ?

(c) Which part of the OS manages hardware resources ?

(d) What is the full form of www ?

(e) Which function is the entry point of every C program ?

PART – B

Marks – 55

(Answering Question No. **3 is compulsory**)

(Attempt any *five* questions from Question No. 4 to 10)

3. Answer the following questions : 2×5=10

(a) Name the three main components of CPU.

(b) Convert decimal 12 into BCD.

(c) Name the two major parts of an operating system.

(d) What is the difference between upload and download over internet ?

(e) What is the difference between = and == operators in C ?

4. Differentiate any *three* of the following giving example where it feels necessary : 3×3=9

(a) ROM and RAM.

(b) Octal Number System and Hexa-decimal Number System.

(c) Internal Commands and External Commands in MS-DOS.

(d) Web site and WWW.

(e) Continue and break (used in C Programming).

5. What part of the computer system is referred to as the "brain" ? Using a block diagram, describe the functioning units of a computer system. 2+7=9

6. Perform the following : 2×4.5=9

   (a) Convert decimal 26 into its octal and hexa-decimal equivalent.

   (b) Convert 17 into Excess-3 and Gray Code.

7. (a) What is the important role played by an Operating Systems in the operations of computer system ?

   (b) Differentiate between Single-user Multi-tasking OS and Multi-user Multitasking OS with examples.

   (c) "Windows is planted over MS-DOS". – Explain. 3×3=9

8. What does the term "Computer network topology" mean ? Using diagrams compare various computer network topologies. 1+8=9

9. Write down all the versions of the "if" control statement used in decision making ? Create a C program that determines which of three integer numbers is the largest. 2+7=9

10. Write short notes on any *three* of the following : 3×3=9

    (a) BIOS

    (b) Gray Code

    (c) Multi-tasking OS

    (d) IP Address

    (e) Pointer.